



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/784,660	02/21/2004	James John Corcoran III		2349

41253 7590 12/17/2004

JAMES J. CORCORAN, III  
12258 NORTH 120TH STREET  
SCOTTSDALE, AZ 85259

EXAMINER

HOLZEN, STEPHEN A

ART UNIT PAPER NUMBER

3644

DATE MAILED: 12/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/784,660

Applicant(s)

CORCORAN, JAMES JOHN

Examiner

Stephen A. Holzen

Art Unit

3644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_ is/are rejected.
- 7) ☒ Claim(s) 1-2 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Claim Objections*

1. Claims 1 and 2 are objected to because of the following informalities: The applicant has mixed apparatus and method claims.

It appears claim 1 is supposed to be an apparatus claim and claim 2 is supposed to be a method claim.

The phrase "enabling.....to" should be written "enabling....of".

The use of the phrase "method of" in an apparatus claim should be re-worded as "a means for".

The use of the phrase "method of" for each limitation in a method claim is not proper, and each limitation should start with a verb.

The phrase "What is claimed is:" should be located at the top of the page, and not in every claim (see examples of attached patents).

Words such as --formation zone-- do not need to be in quotes, and the fact that they are in quotes, could lead to confusion over their meaning. Figures should not be referenced in the claims.

Dependant claims should not repeated the limitations found in the parent claims, because the dependant claims incorporate all the limitations of the parent claim by virtue of their dependence.

2. The following claims (1 and 2) have been drafted by the examiner and are considered to distinguish patentably over the art of record in this application, are

Art Unit: 3644

presented to applicant for consideration (should the applicant approve of these claims, he is requested to reply to this office action and is requested to conform to proper amendment formats and procedures, see attached).

Claim 1: A totally integrated system for automatic formation of flight control for vehicles, said system comprising:

an automatic flight control system having a processor located on the vehicle to enable communications and control of any number of aircraft in a formation,

a communications transceiver located on the vehicle that provides discrete communication links to the number of aircraft in formation,

an aircraft communications bus protocol and message packet structure that provides an exchange of information between the number of aircraft in formation,

a means for encrypting communications exchange between any number of aircraft in formation,

a means for providing a computed formation zone that provides elemental positional information for the number of aircraft in formation;

a means for selecting both formation flight pattern and spatial clearance between the number of aircraft in formation flight,

a means for providing real-time display of aircraft and positions of the number of aircraft in formation,

a means for providing a buffer zone with a relative formation point for any number of aircraft in formation,

a means for polling the number of aircraft in formation for positional information,

a means for providing flight guidance including an autopilot inputs to the number of aircraft in formation;

a means for providing a dampening of the flight profile to the number of aircraft in formation, and

an autopilot located on the vehicle, capable of receiving and transmitting inputs or outputs from the vehicle communications bus.

Claim 2. A process for automatic formation flight control of vehicles comprising a flight control system with processor located on the vehicle, said processor enables communications and controls to any number of aircraft in formation flight and calculates the formation zone (FZ) and (RFP) relative formation point and initiate exchange of similar information between multiple vehicles in order to prevent mid-air collision of multiple vehicles under AFFCS control, a communications transceiver located on the vehicle that provides discrete communication links to any number of aircraft in formation flight, a aircraft communications bus protocols and message packet structure that provides exchange of information from any number of aircraft in formation,

encrypting a communications exchange between any number of aircraft in formation flight',  
providing a computed formation zone (FZ) that provides the speed (IAS), position, and altitude  
selecting both formation flight pattern and spatial clearance between any number of aircraft in formation flight;  
providing real-time display of the positions of any number of aircraft in formation flight;  
providing a buffer zone with a relative formation point (RFP) for each aircraft in formation flight;  
polling all aircraft in formation flight for positional information,  
providing flight guidance including autopilot inputs to any number of aircraft in formation,  
providing a dampening of the flight profile to any number of aircraft in formation.

### ***Conclusion***

3. This application is in condition for allowance except for the following formal matters:

See claim objections above.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Art Unit: 3644

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen A. Holzen whose telephone number is 703-308-2484. The examiner can normally be reached on M-F 7:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Teri Luu can be reached on 703 305-7421. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

sah



TERI PHAM LUU  
SUPERVISORY  
PRIMARY EXAMINER